



FASTSERIES

GETTING STARTED MANUAL

FAST CAPTURE
FAST PROCESSING
FAST RESULTS

FASTSERIES PCI BOARD

FastVision
FastImage 1300
FastFrame 1300

FAST SERIES PMCs

FastMem
Fast4 1300
Fast I/O 1300

30002-00184

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I. INTRODUCTION OF THE ALACRON FASTSERIES

A. FastImage 1300

FastImage 1300 is a full-length PCI board. It is an autonomous imaging system, which can process up to four continuous video streams with minimal impact on the host system.

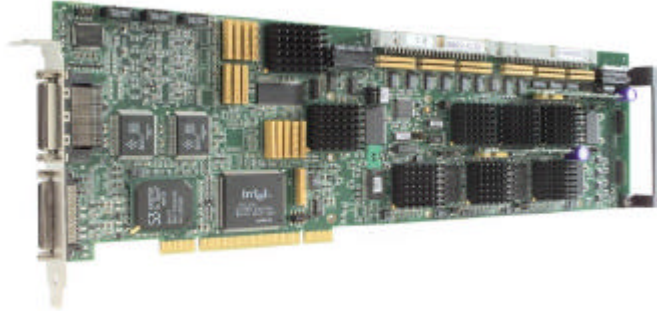


Figure 1. FastImage 1300

Alacron manuals available for FastImage 1300:

- 30002-00176 FastImage 1300 Hardware User's Manual

B. FastFrame 1300 (with or without TriMedia processor)

The FastFrame 1300 provides image data capture from up to four analog sources or from digital sources up to 32 bits, as well as the image-processing capabilities of an optional on-board TriMedia processor.

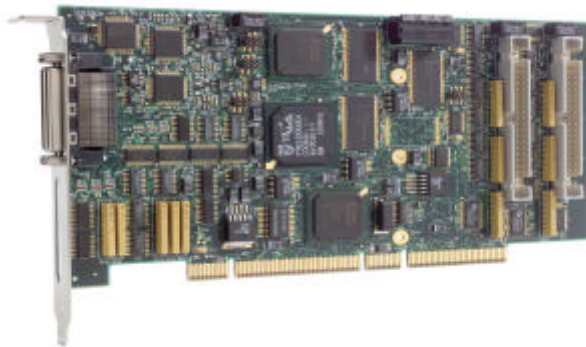


Figure 2. FastFrame 1300

Alacron manual available for FastFrame 1300:

- 30002-00187 FastFrame 1300 Hardware User's Manual

C. FastVision

FastVision is a full-length PCI board with the processing power of up to two Motorola AltiVec processors with added 128-bit vector execution.

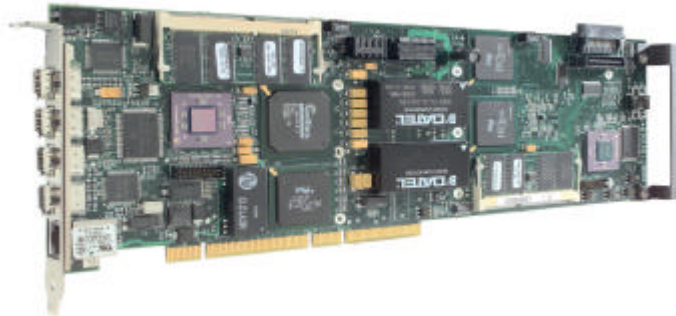


Figure 3. FastVision

Alacron manuals available for FastVision:

- 30002-00185 FastVision Hardware User's Manual
- 30002-00186 FastVision Software User's Manual

D. FastMem

The FastMem is a PMC memory daughter card module that can extend the SDRAM capacity of an ALACRON FastImage 1300 or FastFrame 1300 board by 128, 256, 384, or 512 MB. The FastMem allows several processors to have access to one central data space for large images and other multi-processor applications.

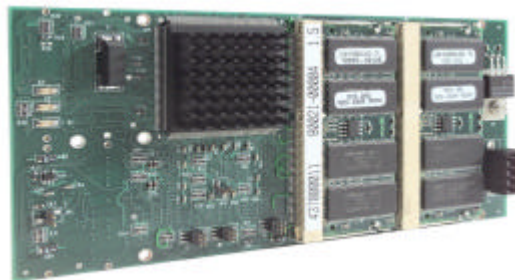


Figure 4. FastMem

Alacron manuals available for Fastmem:

- 30002-00155 FastMem Hardware User's Manual
- 30002-00173 FastMem Programmer's Guide & Reference

E. Fast4 1300

The Fast4 1300 is a PMC daughter card module that can extend the processing power of an ALACRON FastSeries by adding up to eight additional TriMedia TM1300 processors on the FastImage 1300 and adding up to four additional TriMedia TM1300 processors on the FastFrame 1300.

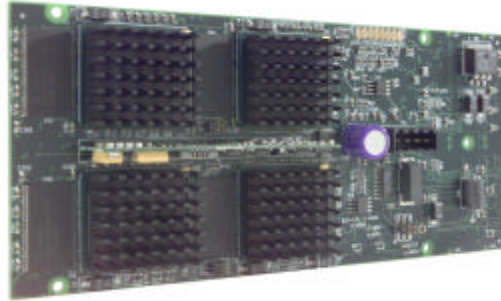


Figure 5. Fast4/1300

Alacron manual available for Fast4 1300:

- 30002-00180 Fast4 1300 Hardware User's Manual.

F. Fast I/O

The Fast I/O is an input and processing daughter card that can process continuous video streams with minimal impact on the FastImage 1300 or the FastFrame 1300 main board, or it can share data and processing with the main-board system.

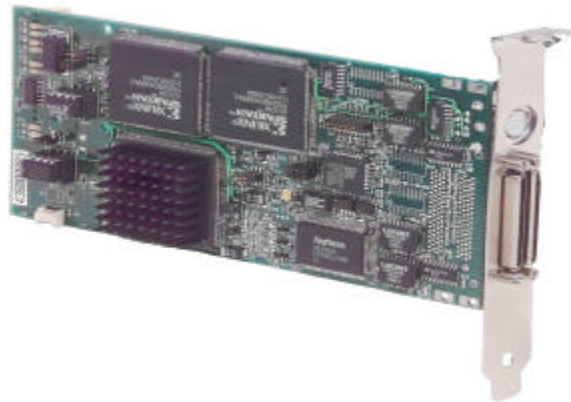


Figure 6. Fast I/O

Alacron manual available for Fast I/O:

- 30002-00153 Fast I/O Hardware User's Manual

G. Other Available Alacron FastSeries Manuals

Alacron manuals cover all aspects of FastSeries hardware and software installation and operation. Call Alacron at 603-891-2750 and ask for the appropriate manuals from the list below if they did not come in your FastSeries shipment.

- 30002-00148 ALFAST Runtime Software Programmer's Guide & Reference
- 30002-00150 FastSeries Library User's Manual
- 30002-00162 FOIL – FastSeries Object Imaging Library User's Manual
- 30002-00169 ALRT Runtime Software Programmer's Guide & Reference
- 30002-00170 ALRT, Alfast & FastLIB Software Installation Manual for Linux
- 30002-00171 ALRT, Alfast, & FastLIB Software Installation for Windows NT
- 30002-00183 FastImage 1300 Camera Integration User's Manual

II. REQUIREMENTS

A. System Requirements

- Windows™ NT with service pack 6 or Windows™ 2000 with service pack 2 operating systems fully installed.
- Minimum 128MB memory installed.
- Software Development Environment (SDE)
- WinZip Software.
- Acrobat Reader Software
- ALRT/ALFAST software is available for Linux, Solaris™, and Windows™ NT and Windows™ 2000 operating systems.
- Air circulation of at least 200 LFM is required for all Fast Series boards.
- The operating temperature range of the Fast Series boards is 0° Celsius to 50° Celsius.

B. ESD Requirements

- ESD grounding device, have grounding device in place before handling board.

***** CAUTION ****

To avoid Electro Static Discharge damage to the board, use an ESD wrist strap or other grounding device during installation and at any time when you are handling the board. Keep the board inside the ESD bag when not in use

C. Tools Requirements

- Screwdriver set for computer chassis screws.

D. The Shipping Carton

1. The shipping carton should contain the following

- Alacron FastSeries boards in an ESD bag with DC power cables and hardware kits for PMC boards, if ordered.
- Alacron FastSeries Input Cables, if ordered.
- Alacron Combination Runtime Software, if ordered.
- Alacron FastSeries Hardware and Software Manuals.
- Software Development Environment (SDE), if ordered.
- Alacron NRE (Non Reoccurrence Engineering) Software, if ordered.

2. Unpack the shipping carton and inspect the following

- Check the carton for visible shipping damage.
- Check each item for damage as you remove it from the carton.
- If any item is missing or damaged, see “Returning Products section VI.
- Save the shipping carton and packing materials in case you need to store or ship your ALACRON board.
- Save the anti-static protective bag and store the board inside the bag when the board is not in use.

E. DC Power Cables Summary

FastSeries products use the following DC power cables:

- 10024-00008 FastVision DC Power Cable
- 10024-00160 FI1300, FF1300, Fast I/O and Fast4 DC Power Cable
- 10024-00191 FastMem 3.3V DC Power Cable
- 10024-00192 Fast4 5V DC Power cable

FASTSERIES BOARD	USE ON	DC POWER CABLE	CONNECTION LOCATION
FastImage 1300	Used alone	10024-00160	P5
FastImage 1300	Used with one or two PMC Boards	10024-00160 (2)	P5 & P13
FastFrame 1300	Used alone	10024-00160	P1
FastFrame 1300	Used with one PMC Board	10024-00160	P1
FastVision	Used alone	10024-00008	J4
FastVision with PMC board required 3.3V	Used with one or two PMC Boards	10024-00191 (2)	On PMC Board
FastVision with PMC do not required 3.3V	Used with one or two PMC Boards	10024-00192 (2)	On PMC Board
Fast4	Used On FastSeries	10024-00160	P5 or P13
FastI/O	Used On FastSeries	10024-00160	P5 or P13
FastMem with required 3.3v	Used on FastSeries	10024-00160	P5 only
PMCs board with required 3.3V	Used on other Manufacturing Host Board	10024-00191	On PMC Board
PMCs board with do not required 3.3V	Used on other Manufacturing Host Board	10024-00192	On PMC Board

Table 1 DC Power Cables Guide

F. FastSeries Input Cables Summary

1. FastSeries Input Cables

FastSeries products use the following cables:

- 10024-00161 FastSeries Digital Input Cable.
The Digital Input cable is a Y cable with one 68-pin P1 VHDCI connector and two 37-pin female DSUB37 P2 & P3 connectors.
Alacron Ordered Part Number: 80004-00030
- 10024-00162 FastSeries Type 1 Analog Input Cable.
The Analog Input cable has a 68-pin P1 VHDCI connector on one end and four output connectors, three BNC J2, J3 & J4 and one 9-pin female DB-9F P5 on the other end.
Alacron Ordered Part Number: 80004-00033
- 10024-00163 FastSeries TV OUT RS322 Cable.
The FastSeries TV OUTRS232 I/O and NTSC Analog cable has 8-pin Miniature-DIN connector on one end and three connectors, two BNC P2 & P3 connectors and one 9-pin male DB-9M P4, on the other end.
Alacron Ordered Part Number: 80004-00034
- 10024-00200 FastVision Channel Link Cable.
The FastVision Channel Link cable has a 40-pin ribbon P1 connector on one end and P2 connector on the other end.
Alacron Ordered Part Number: 80024-00200
- 10024-00203 FI1300 Short Adapter Cable.
The FI1300 Short Adapter Cable has a 62-pin J1 female high density "D" Sub-connector on one end and 68-pin P2 VHDCI connector on the other end.
Alacron Ordered Part Number: 80024-00203
- 10024-00204 FI1300 Video Output Cable.
The FI1300 Video Output Cable has a 62-pin P1 high-density D-Sub connector on one end and three connectors, two BNC P2 & P3 connectors and one 15-pin male high-density P5 connectors on other end.
Alacron Ordered Part Number: 80024-00204
- 10024-00205 FI1300 Multifunction Cable.
The FI1300 Multifunction Cable has one 62-pin P1 high-density D-Sub connector on one end and five connectors, two BNC P2 & P3 connectors, one 15-pin male high-density P5 connectors, one 9-pin male DB-9M P4, and one 26-pin Mini D Ribbon P6 connector on the other end.
Alacron Ordered Part Number: 80024-00205
- 10024-00235 FI1300 Dual Camera Link Cable.
The FI1300 Dual Camera Link cable has two 68-pin P2 & P1B VHDCI connectors on one end and four connectors, two 9-pin female DB-9F P3 & P4 connectors and two 26-pin Mini D ribbon P5 & P6 connectors on the other end.
Alacron Ordered Part Number: 80024-00235
- 10024-00244 FastSeries Short Digital Input Cable.
The Short Digital Input cable has one 68-pin P1 VHDCI connector and one 62-pin J1 female high density "D" Sub-connector on one end.
Alacron Ordered Part Number: 88000-00199
- 10024-00250 FF1300 Camera Link Cable.

The FF1300 Camera Link Cable has 68-pin VHDCI connector on one end and two connectors, one 9-pin female DB-9F J1 and one 26-pin MDR P2 connector on the other end.
 Alacron Ordered Part Number: 80024-00235

2. FastSeries Input Cables Connections Guide

ALACRON P/N	CONNECTIONS GUIDE FOR FASTSERIES INPUT CABLES
10024-00161	The 68-pin VHDCI connector that connects P1 of the cable to J1A or J1B on the FI1300 board. The output connector, P2 or P3 plugs into a Digital Camera connection.
10024-00162	The 68-pin VHDCI connector that connects P1 of the cable to J1A or J1B on the FI1300 board. The output connector, P3 or P4 plugs into an analog Camera connection.
10024-00163	The 8-pin Miniature DIN connector that connect P1 of the cable to on the J4 on the FastFrame 1100 board. The output connector, P2 or P3 plugs into a video component connection and P4 plugs into an RS232 cable.
10024-00200	The FastVision Channel Link Cable connects J7 from one FastVision board to J7 of another FastVision.
10024-00203	The 68-pin J2 VHDCI connector that connects P2 to the J2 of the FI1300 and the output connectors, J1 plug into the P1 of the FI1300 Video Output Cable (10024-00204) or plugs into the P1 of the FI1300 Multifunction Cable (10014-00205)
10024-00204	The 62-pin high-density D-Sub connector that connects P1 of the cable to J1 of the FI1300 Short Adapter Cable (10012-00203) The output connector, P2 plug into the "C" components of the S video and P5 plugs into the video monitor cables.
10024-00205	The cable provides connections to a TV, a monitor, a RS232 cable and the channel link portion of a camera link camera. The 62-pin high-density connector that connects P1 of the cable to J1 of the FI1300 Short Adapter Cable (10012-00203). The output connector, P2 plugs into Video or "Y" components of the "S" video, P3 plugs into the "C" components of the "S" video, P4 plugs into a RS232cable, P5 plugs into a video monitor cable, and P6 plugs into a Camera Link camera.
10024-00235	The 68-pin VHDCI connector that connects P2 of the cable to J2 of the FI1300 board and connects P1B of the cable to J1B on the FI1300 board. The output connector, P3 connector the "comm. Port" to the camera via the P5 connector, and the P4 connector connects the "comm. Port" to the camera via the P6 connector
10024-00244	The 68-pin VHDCI connector that connects P1 of the cable to J1A or J1B on the FF1300 boards. The output connector, J1 plugs into a Digital Camera or Camera cable connection.
10024-00250	The 68-pin VHDCI connector that connects P1 of the cable to J1A or J1B of the FF1300 board. The output connectors, J1 plugs into a RS232 and P2 plugs into a Camera Link Camera.

Table 2 FastSeries Input Cables Connections Guide

3. FastSeries Bracket Connections

Digital and Analog Input connectors (J1A & J1B on both FastImage and FastFrame)
Video Monitor Output connector (J2 on FastImage only) are accessible from the PCI
rear panel bracket.

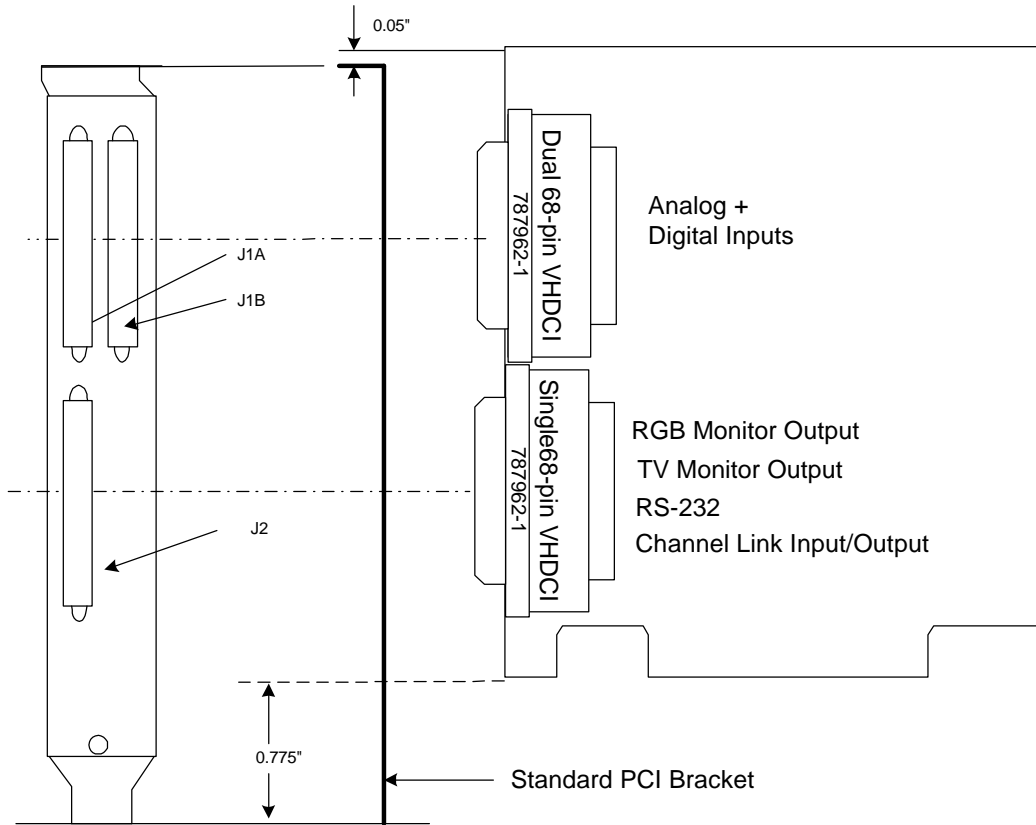


Figure 7. FastSeries Bracket

III. HARDWARE INSTALLATION

A. Prepare Chassis for Installation

1. ESD Requirements

- a) Use an ESD wrist strap or other effective grounding device during board installation and any other time when you are handling the boards.

2. Power Down

- a) Ensure that the PC System to be used to install FastSeries board has Windows NT or Windows 2000 operation system installed and functioning. Further assumed that the latest Service Pack also has been successfully installed.
- b) Power down PC System and unplug the computer power cord.

3. Prepare Case

- a) Remove the cover from the case by removing any screws that are holding the case cover to the case. Put the screws safely aside to use again later.
- b) If you need to remove an old board before installing the new ALACRON board, be careful not to damage the PCI slot. Unscrew and pull out the board that corresponds to the PCI slot you will use for the new board.
- c) Clean and inspect to make sure the case is free of dust and all cables and connectors are securely tightened and correctly connected.
- d) You can install an additional fan to increase air circulation and keep heat down by screwing a fan into the rack next to the vent on the front of the case. Airflow of 200 LFM is needed to properly cool all the FastSeries boards.
- e) Make sure all cards currently in use are fully seated in their slots.

4. Choose The PCI Slot

- a) Each FastSeries board—the FastVision, FastImage 1300 or the FastFrame 1300 will occupy one PCI slot when it has no PMC installed.
- b) With a PMC installed, two adjacent PCI slots are needed. While the board may be installed in any free PCI slot, the slot chosen may affect port addresses assigned to the board.
- c) Choose a PCI slot where there will be no interference with motherboard components or wires, and where there will be enough room for good air circulation.

B. Installation Of The 3.3V DC Power Connection for PMC Board

Follow these instructions to install the 3.3V DC power connector only if you are installing the PMC board that requires 3.3V, otherwise skip this section and go to section C.

***** WARNING ****

If you are unsure of the procedure, or any of the connections, contact a qualified technician for help. Incorrect connection can result in permanent damage to the FastSeries boards, the motherboard, or the computer. Incorrectly applied power will void your Alacron warranty.

1. Installing the 3.3V for FastImage 1300 or FastFrame 1300

The FastMem daughter card provides extra memory to the FastImage 1300 board. It requires an external source of 3.3V DC power.

The DC Power Cable (P/N10024-00160) shipped with your host board has a larger black P1 end and a larger white P2 at the other end. The P1 end is a Weidmuller 4-pin. The P2 end is a Molex 4-pin. A single orange wire labeled "3.3V" is connected to P1 pin 1. It is shipped secured in a bag.

Follow these instructions to install 3.3V power cable:

- a) The looped orange wire must be spliced to an orange 3.3V DC power wire in one of the DC power sources coming out from the system power supply.
- b) Choose an orange cable that is convenient to work with.
- c) After you have securely joined the two 3.3V wires and completely covered the junction with electrician's tape, use tie wrap, if necessary, to ensure all cables are tightened and correctly connected
- d) Plug the large white P2 end to the DC power cable coming out from the power supply. This connection can only be made in one direction; so do not force the connection.
- e) The black P1 end of the power cable is now ready to plug into the FastSeries board.

2. Installing the 3.3V For FastVision

The FastMem daughter card provides extra memory to the FastVision board. It requires an external source of 3.3V DC power.

The DC Power Cable (P/N10024-00191) shipped with your host board has a smaller black P1 end and one single 18 AWG Orange wire labeled 3.3V and one single 18 AWG black wire labeled at the other end. It is shipped secured in a bag.

Follow these instructions to install 3.3V power cable:

- a) The looped orange wire must be spliced to an orange 3.3V DC power wire in one of the DC power sources coming out from the system power supply.
- b) Choose an orange cable that is convenient to work with.
- c) After you have securely joined the two 3.3V wires and completely covered the junction with electrician's tape, use tie wrap, if necessary, to ensure all cables are tightened and correctly connected

- d) Plug the large white P2 to the DC power cable coming out from the power supply. This connection can only be made in one direction; so do not force the connection.
- e) The small black P1 end of the power cable is now ready to plug into the FastMem board.

C. Installation Of The PMC Board On The FastSeries Board

Follow these instructions only if you are installing the PMC board on the FastSeries board, otherwise skip this section and go to section D.

1. Installing the Fast I/O or FastMem PMCs On the FastVision board

- a) Try to handle the board and PMC by their edges only. There is room on both ends of the FastVision board for two PMC boards, one PMC on each half of the board.
- b) If you are using one PMC, install it on the half of the board that will permit the most air circulation around the PMCs—the half that leaves the most room between the board and other components.
- c) The two sets of FastVision PMC connectors are labeled (Set #1) **JN1, JN2, JN3, and JN4**, and (Set #2) **JN11, JN12, JN13, and JN14**
- d) If you are using two PMCs, install one card on each half of the FastVision board.
- e) Firmly seat the PMC card into the PMC connectors on the back of the FastVision board.
- f) When in place, the mezzanine boards will run parallel to the length of the host board, sandwiched alongside.
- g) Turn the expansion board with PMCs attached over. Install the four (4) screws that came in the PMCs shipment through the expansion board and into the plastic stand-offs already installed on the PMC board.
- h) Secure the screws evenly and snugly, but do not over-tighten them.
- i) Choose TWO adjacent PCI slots for your host board, in order to permit good air circulation and to leave adequate room between your host board, its attached PMCs, and other system components.
- j) The expansion boards are now ready to be installed into the PC system.

2. Installing the Fast4 1300 or FastMem on the FastImage 1300 board

- a) Try to handle the board and PMC by their edges only. There is room on both ends of the FastImage 1300 board for two PMC boards, one PMC on each half of the board.
- b) If you are using one PMC, install it on the half of the board that will permit the most air circulation around the PMCs; The half that leaves the most room between the board and other components.
- c) If you are using two PMCs, install one card on each half of the FastImage 1300 board.
- d) The two sets of FastImage 1300 PMC connectors are labeled **P1, P2 and J1 for Fast4 only**, and **P6, P7, and J3.for Fast4 or FastMem**

- e) Firmly seat the PMC board into the PMC connectors on the back of either board.
- f) When in place, the mezzanine cards will run parallel to the length of the host board, sandwiched alongside.
- g) Turn the expansion board with PMCs attached over. Install the four (4) screws that came in the PMC shipment through the expansion board and into the plastic stand-offs already installed on the PMCs.
- h) Secure the screws evenly and snugly, but do not over-tighten them.
- i) The expansion boards are now ready to be installed into the PC system.

3. Installing the FastMem on the FastFrame 1300

- a) Try to handle the FastMem board by its edges only.
- b) The FastFrame 1300 has one set of PMC connectors, labeled **PN1, PN2, and PN4**.
- c) Firmly seat the FastMem into the set of PMC connectors.
- d) With the FastMem attached, turn the board over. Install two (2) of the four screws received in your shipment through the board and into the pair of plastic stand-offs farthest from the front bracket.
- e) Do not remove the two unsecured stand-offs nearer the front bracket. They keep the FastMem at the correct height.
- f) The expansion boards are now ready to be installed into the PC system

D. Installation Of The FastSeries Boards

Follow these instructions to install the FastSeries boards on the PC system.

1. Installing FI1300, FF1300 & FastVision without the PMC board

- a) Touch a metal part of the computer chassis before picking up the board. Try to handle the board by its edges only.
- b) Make sure the bracket on the back end of the board matches the card guide (if there is one) for the PCI slot you are using. Do not bend the expansion board. Do not press down too hard on your motherboard.
- c) Carefully seat the board into the PCI slot you have chosen. Gently rock the board back and forth very slightly, if necessary, to slide it into position. If there is any binding with the card guide, pull the board out and carefully line it up and insert the board again.

Note: Do not force the host board into position. The board should slide in easily if it is straight and lined up correctly.

- d) Make sure the board's edge connectors are lined up properly with the PCI-slot connection on the motherboard. Use a flashlight to inspect this area, if necessary.
- e) Screw in the bracket screw so it's snug, but not too tight, i.e., with 10-pound torque.
- f) Check the FastSeries board to make sure that installing the bracket screw did not cause the board to pivot in the PCI slot or cause the back end to be lifted up away from the slot contacts.

Note: Never try to install the chassis screws after you have turned on the system.

2. Installing the FI1300, FF1300 & FastVision with the PMC board

- a) Touch a metal part of the computer chassis before picking up the board. Try to handle the board by its edges only.
- b) With a PMC installed, two adjacent PCI slots are needed. While the board may be installed in any free PCI slot, the slot chosen may affect port addresses assigned to the board.
- c) Choose a PCI slot where there will be no interference with motherboard components or wires, and where there will be enough room for good air circulation.
- d) Make sure the bracket on the back end of the board matches the card guide (if there is one) for the PCI slot you are using. Do not bend the expansion board. Do not press down too hard on your motherboard.
- e) Carefully seat the board into the PCI slot you have chosen. Gently rock the board back and forth very slightly, if necessary, to slide it into position. If there is any binding with the card guide, pull the board out and carefully line it up and insert the board again.

Note: Do not force the host board into position. The board should slide in easily if it is straight and lined up correctly.

- f) Make sure the board's edge connectors are lined up properly with the PCI-slot connection on the motherboard. Use a flashlight to inspect this area, if necessary.
- g) Screw in the bracket screw so it's snug, but not too tight, i.e., with 10-pound torque.
- h) Check the FastSeries board to make sure that installing the bracket screw did not cause the board to pivot in the PCI slot or cause the back end to be lifted up away from the slot contacts.

Note: Never try to install the chassis screws after you have turned on the system.

E. DC Power Connections For All FastSeries Boards

This section describes how to connect DC power cables on all FastSeries boards that are installed on your PC System.

1. DC Power connection for the FastImage 1300

You received two (2) Alacron P/N 10024-00160 DC Power Cables in your FastImage 1300 board shipment.

If you have installed one PMC on the host board, you will use one (1) of those power cables. If you have installed two (2) PMCs on the FastImage 1300, you will use two of those cables.

The DC Power cable is labeled P1 on larger black end and P2 on the larger white end. The P1 end is a Weidmuller 4-pin with a single orange wire attached. Leave the orange wire as is, secured in a loop, unless you are installing a PMC (like FastMem) that requires a separate 3.3V connection (like FastMem).

- a) If you have installed the FastImage 1300 alone, use one DC power cable and plug a large white P2 to the DC power cable coming out from the power supply. Plug the other end (black P1) to the DC power connector **P5** located on the FastImage 1300 board.
- b) If you have installed one PMC on the FastImage 1300 on location **P6, P7, and J3**, then use one DC power cable and plug the large white P2 to the DC power cable coming out from the power supply. Plug the other end (black P1) to the DC power connector **P5** located on the FastImage 1300 board.
- c) If you have installed a second PMC on the FastImage 1300 on location **P1, P2 and J1**, then use another DC power cable in the same way. Plug the large white P2 to the DC power cable coming out from the power supply plug and the other end (black P1) to the DC power connector **P13** located on the FastImage 1300 board.
- d) If you are installing a PMC that requires a separate 3.3V connection (like FastMem), See section B for more instructions, and repeat step b.

2. DC Power connection for the FastFrame 1300

You received one Alacron P/N 10024-00160 DC Power Cable in your FastFrame 1300 board shipment.

The DC Power cable is labeled P1 on the larger black end and P2 on the larger white end. The P1 end is a Weidmuller 4-pin with a single orange wire attached. Leave the orange wire as is, secured in a loop, unless you are installing a PMC that requires a separate 3.3V connection (like FastMem).

- a) Connect the larger white P2 end of the DC power cable to any spare power cable coming out of the system power-supply unit. This connection can only be made in one direction; so do not force the connection. If you have trouble, turn the connector over and try it the other way.
- b) Plug the black P1 end of the DC power cable into the connector labeled P1 located at the top of the FastFrame 1300.
- c) If you are installing a PMC that requires a separate 3.3V connection (like FastMem), See section B for more instructions, and repeat step b.

3. DC Power connection for the FastVision

You received one 10024-00008 DC power cable with your FastVision board shipment.

The DC Power Cable Alacron P/N10024-00008 shipped with your board has a larger black P1 end and a larger white P2 at the other end. The P1 end is a Weidmuller 4-pin. The P2 end is a Molex 4-pin. It is shipped secured in a bag

- a) If you have installed FastVision alone, connect the larger white P2 end of the DC power cable to any spare power cable coming out of the system power-supply unit. This connection can only be made in one direction; so do not force the connection. If you have trouble, turn the connector over and try it the other way.
- b) Plug the black P1 end of the DC power cable into the connector J4 located at the top of the FastVision.
- c) If you are installing one or two PMCs on the FastVision board, you must use the 10024-00191 for 3.3V or 10024-00192 for 5V DC power cables that came with your PMC board. See section B for more instructions.

F. Installation Of The Alacron PMC Board On Other Host Boards

Note: *If the host board is not installed in an ATX-style PC, Contact Alacron for Technical Assistance. See "Alacron Technical Support" Section VII.*

If your Alacron Fast 4 1300, Fast I/O 1300 or FastMem PMC is to be installed on another manufacturer's host board, you must use the Alacron internal power cable P/N **10024-00191** (3.3V) or P/N **10024-00192** (5V) which was shipped with your PMC board.

Contact the manufacturer of the host board for host-board installation details and instructions on seating a mezzanine card.

1. DC Power connection for 5V

You received one Alacron P/N 10024-00192 DC Power Cable in your FastSeries board shipment.

Connect the larger white P2 end of the DC power cable to any spare power cable coming out of the system power-supply unit. This connection can only be made in one direction; so do not force the connection. If you have trouble, turn the connector over and try it the other way.

Plug the black P1 end of the DC power cable into the connector located at the top of the PMC board.

2. DC Power connection for 3.3V

You received one Alacron P/N 10024-00191 DC Power Cable in your FastSeries board shipment.

Follow the directions on section B to connect the orange wires from the Alacron power cable to the orange wire from the system power supply to establish a 3.3V DC power source.

G. Final Check & Power-Up

1. Final check

Make Sure:

- a) PC power system is OFF
- b) There is enough room between components for air to circulate, install an additional fan if necessary.
- c) PMCs are seated in the right place on board and there is nothing touching the new expansion board and/or its attached PMCs.
- d) All Internal power cables, ribbon cables are properly connected and tie wrap if necessary.
- e) Board edge connectors are seated properly in PCI slot.
- f) Chassis screw is holding board properly in place and is not too tight.
- g) There are no screws or any other objects that have been accidentally dropped onto the motherboard or anywhere else inside the case.
- h) There are no cables that will be in the way of the case cover
- i) All the cables are out of the way, and then put the computer case cover back on.

- j) To install cover screws and connect power cable, mouse cable, keyboard cable, video cable and all other external cables.
- k) PC System is now ready to turn ON.

2. Power-Up

- a) Turn ON the power switch and ensure the PC system completes boot-up.

Note: After the system has been running for about two hours, check to see if it's overheating, or is uncomfortably hot to the touch. If it is, you need more air circulation

- b) If the PC system does not boot up, contact Alacron for Technical Assistance. See "Alacron Technical Support".

IV. SOFTWARE INSTALLATION

The following Alacron software manuals have more detailed information:

A. Alacron Software

- S3 Graphics Accelerator Driver
- Software Development Environment
- FastLIB
- ALFAST
- ALRT
- FastMem Software

B. System Requirements

- Windows™ NT with service pack 6 or Windows™ 2000 with service pack 2 operating systems fully installed.
- Minimum 128MB memory installed.
- WinZip Software fully installed.
- Acrobat Reader Software fully installed
- All Software Installation must be made from an account with administrator capability

C. Other Software Requirements

- Microsoft Visual Studio (If you will be modifying the program)
- The makefiles for the example programs rely upon the **nmake** utility in the Visual Basic ++ environment in Windows NT. You may use another utility after making suitable modifications to the makefiles supplied.

D. Software Installation Matrix

Follow these installation matrixes in order to ensure that all software is properly installed correctly.

STEP	APPLICATIONS	Window NT	Windows 2000
1	Windows Operation System (WinNT & Win2K)	Yes	Yes
2	Ethernet Driver	Yes	-
3	Service Pack	sp6	sp2
5	Video Display Driver	Yes	-
9	WinZip	Yes	Yes
10	Acrobat Reader	Yes	Yes
6	FastSeries Device Driver for W2000 Only (Section E)	No	Yes
7	S3 Graphics Driver for Analog Output Only (Section F)	Yes	Yes
8	Setting up the Video Display (Section G)	Yes	Yes
11	Philips TriMedia SDE, If required (Section H)	Yes	Yes
12	FastLIB, If required (Section I)	Yes	Yes
13	ALFAST or ALRT (Section J or K)	Yes	Yes
12	FastMem, If required (Section L)	Yes	Yes
14	Environment Variables Setup (Section M)	Yes	Yes
15	Reboot PC System	Yes	Yes
16	Installation Check (Section N)	Yes	Yes

Table 3. Software Installation Matrix

E. The FastSeries Device Driver Installation

Follow these instructions only if you are installing the FastSeries boards into a PC System that is using Windows 2000 operating system. Otherwise skip this section and go to the next section.

- a) Boot Windows 2000.
- b) Insert Alacron CDROM provided into CDROM driver.
- c) Log in as administrator.
- d) Following login, the system should display: **“Welcome to the Found New Hardware Wizard”**
- e) Select **“Next”**, the **“Install Hardware Device Drivers”** screen should display.
- f) Select **“Search for a suitable driver for my device”**
- g) Select **“Next”**, the **“Locate Driver Files:”** screen should display.
- h) Select **“CD-ROM drives”**, deselect **“Floppy disk drives”**.
- i) Select **“Next”**, the **“Driver Files Search Results”** screen should display.
- j) Select **“Finish”**
- k) Repeat from step d) for each TriMedia processor and reboot the PC System.

F. S3 Graphics Driver Installation

Follow these instructions only if you are installing the S3 Graphics Driver for the FastSeries boards that use Analog Output. Otherwise skip this section and go to the next section.

1. General Information

The S3 driver can be downloaded free of charge from the S3 Web site at www.S3.com.

Access the **Drivers page** and complete the License Agreement and Download the S3 Windows NT driver for the VirGE GX2 chip (#357).

The S3 Graphics Driver also shipped with Alacron Software under Zip files.

The S3 driver is required only for FastSeries board that use Analog output.

2. Installing the S3 Driver.

- a) For the FastSeries board using analog output, the PC system video display will not display properly until you have installed the S3 driver.
- b) Ensure that your PC system is running with Windows NT 4.0 or Windows 2000 installed.
- c) Create a "**c:\s3 driver**" directory for the S3 files.
- d) Access your CD-ROM drive, from the list of files select "**wnt32309.zip**"
- e) Right click at "**wnt32309.zip**" and select "**Extract to**"
- f) The "**Extract**" screen should display, from the "**Folders/drives**" window double click "**C**" drive, click "**s3 driver**" directory then the "**Extract to**" window should display "**c:\s3 driver**".
- g) Click "**Extract**" and close all windows when completed unzip all S3 files.
- h) Right click on the desktop, select "**Properties**" and select "**Setting**" Tab
- i) Select "**Display Type**", the "**Display Type**" screen should display, select "**Change**"
- j) The "**Change display**" screen should display, select "**Have disk**".
- k) The "**Install From disk**" screen should display, select "**Browse**".
- l) The "**Locate File**" screen should display, select "**Cancel**".
- m) The "**Locate File**" screen should display, double click "**My computer**", click "**C**" driver -> and click "**S3 Driver**" directory.
- n) The "**S3 virge.inf**" file should display, select "**Open**" and the "**Install from disk**" screen should display, select "**OK**".
- o) The "**Change Display**" screen should display, selects "**S3 Incorporation Display Driver V3.23.09**" and selects "**OK**".
- p) The "**Third Party Driver**" screen should display, select "**Yes**" to proceed.
- q) The "**Installing Driver**" screen should display, select "**OK**"
- r) The "**Display Type**" screen should display, select "**Close**"
- s) The "**Display Properties**" screen should display, select "**Close**"

- t) The “**System Setting Change**” screen should display, select “**Yes**” to restart your computer system and to make all the configuration changes take effect.
- u) After PC system reboot, the “**Invalid Display Settings**” screen should display, click “**OK**”.
- v) The “**Display Properties**” screen should display, set “**Color Palette**” to “**True Color (24 or 32)**” or “**65536 Colors**” and from the “**Desktop Area**”, set to “**800 by 600 pixels**”.
- w) Click “**Apply**” and “**OK**” twice to complete the installation.

G. Setting Up The Video Display

The Video Display Setting must be set for the correct setting of the VGA environment to ensure that the video display of the PC system is displayed properly.

1. Video display setting for Windows NT.

- a) Right click on the “**Desktop**”, select **Properties**, the “**Display Properties**” screen should display.
- b) Select “**Setting**” tab, set the “**Color Palette**” to “**True Color (24 or 32)**” or “**65536 Colors**” and from the “**Desktop Area**”, set to “**800 by 600 pixels**”.
- c) Click “**Apply**” and “**OK**” twice to complete the setting.

2. Video display setting for Windows 2000.

- a) Right click on the “**Desktop**”, select **Properties**, the “**Display Properties**” screen should display.
- b) Select “**Setting**” tab, set the “**Colors**” to “**True Color (24 or 32)**” or “**65536 Colors**” and from the “**Screen Area**”, set to “**800 by 600 pixels**”.
- c) Click “**Apply**” and “**OK**”, then click “**Yes**” to keep these settings.
- d) Click “**OK**” to complete the setting.

H. Software Development Environment (SDE) Installation

Follow these instructions only if you are installing the SDE that is required for the FastSeries board. Otherwise skip this section and go to the next section.

Note: *Documentation on program development with Philips SDE and execution within the TMMAN environment is provided on a CD-ROM that can be ordered from Alacron.*

1. General Information

The Philips Software Development Environment (SDE) for the TriMedia processor contains utilities to develop, compile, simulate, and debug TriMedia application programs.

Applications are developed in SDE and then executed in the Philips TMMAN execution environment, which supplies drivers, libraries, and utilities for loading and executing TriMedia programs.

While there are some systems like Windows NT or Windows 2000, where TMMAN is not supported. TriMedia applications can be compiled and simulated on several operating systems. Complete information about drivers and libraries can be found within the documentation on the CD-ROM containing the Philips SDE software.

The installation requires approximately 140 MB of free space on the target drive

2. Installing the SDE software

- a) Insert the Philips SDE CD-ROM into your CD-ROM drive.
- b) Access your CD-ROM drive, from the list of files and directories on the CD-ROM; print the file **Readment.txt** for more helpful information.
- c) Go to **..lwindows** directory and double click **setup.exe** to run the SDE installation.
- d) The **“Trimedia SDE v2.2 Setup”** and **“Welcome”** screen should display, click **next**.
- e) The **“Users License Agreement with Trimedia Technologies”** screen should display, click **Yes**.
- f) Type in your **Name** and **Company**, then click **Next**
- g) The **“Choose destination Location”** screen should display, select **c:\trimedia** as the default setup directory and click **Next**.
- h) The **“Setup Type”** screen should display, select **Typical**, and click **Next**.
- i) The **“System Drivers Setup”** screen should display, select **“Yes, go ahead to install all system driver”** and click **Next**.
- j) The **“Select Program Folder”** screen should display, click **Next**.
- k) The **“Setup the Appropriate Environment”** screen should display, click **Next**
- l) After several minutes, the **“Created Trimedia.bat file”** screen should display, click **OK** to start the installation.
- m) The **“Setup Complete”** screen should display, deselect **“Yes, I want to view the Read me file now”** and do not select **“Yes, I want to launch ‘tmgman.exe’ program now “** and click **Finish**

3. Setting up the SDE Environment Variable for WinNT

Follow these instructions only if you are using the Windows NT operating system. Otherwise skip this section and go to the next section.

- a) Right click **“My Computer”**, select **Properties**, the **“System Properties”** screen should display.
- b) Select **“Environment”** tab, scroll down **“System Variables”** Window and select **“Path”**
- c) Go to **“Value”** Windows, type **“c:\trimedia\bin;”** at the beginning of the line.
- d) Click **“Set”**; **Apply** and **OK** to close **“System Variables”** window.
- e) Click **Start -> Setting -> Control Panel**, the control panel window screen should display.
- f) Double click **“Devices”**, the devices window screen should display.

- g) Scroll down “Device” window to select “**tmman**” and click “**startup**” the “**Device**” window display.
- h) Select “**Manual**” on “Startup Type” then click **OK**.
- i) Select “**Stop**” to stop tmman device, select “**Yes**” and click **Close** to exit
- j) Reboot the PC System to complete the software installation and the environment setup.

4. Setting up the SDE Environment Variable for W2000

Follow these instructions only if you are using the Windows 2000 operating system. Otherwise skip this section and go to the next section.

- a) Right click “**My Computer**”, select “**Properties**”, the “System properties” screen should display.
- b) Select “**Advanced tab**”, click “**Environment Variables**”.
- c) Select “**System Variable**”, click “**New**”, the “**New system Variable**” screen should display.
- d) On the “**Variable name**” type “**ALFAST**”
- e) On The “**Variable Value**” type “**C:\usr\lalfast**”.
- f) Select “**OK**”
- g) Scroll down “**system Variables**” window and select “**Path**”.
- h) Select “**Edit**”, the “**Edit System Variable**” screen should display.
- i) On “**Variable Value**” window, type “**%alfast%\winnt\bin;**” at the beginning of the line.
- j) Click “**OK**” 3 times to exit.
- k) Reboot the PC System to complete the software installation and the environment setup.

I. The FastLIB Installation

Follow these instructions only if you are installing the FastLIB software that is required for the FastSeries board. Otherwise skip this section and go to the next section.

1. General Information

The library is provided as a GUI-style executable program with all device drivers, program services, and registry entries made automatically

Alacron FastSeries Library software contains vector and image-processing functions. The library software is distributed in two versions:

- One links to the TriMedia program.
- One links to the host Pentium program.

FastLIB may be used with Windows NT or Windows 2000 operating systems.

When you install the library distribution software the first time, the installation program creates all required directories and files. When you install a newer FASTLIB release over the older one, previously installed files will be overwritten. Therefore, if you have modified any of the original distribution files, you should make copies of those files before installing the FastLIB upgrade.

The installation requires approximately one MB of free space on the target drive

2. Installing the FastLIB

- a) Insert the Alacron CD-ROM that came with your FastSeries board shipment into your CD-ROM drive.
- b) Access your CD-ROM drive
- c) If you are using FastLIB for the Pentium-Linkable library, go to "**80004-90010**" directory and double click "**fastlib-msc-obj-x.y.exe**" to run the FastLIB installation.
- d) If you are using FastLIB for the TriMedia-Linkable library, go to "**80004-90003**" directory and double click "**fastlib-tm-obj-x.y.exe**" to run the FastLIB installation.
- e) The "**InstallShield Self-extracting EXE**" screen should display, click "**Yes**" to install the FASTLIB MSC OBJ or FASTLIB TM OBJ.
- f) The "**Setup**" and then the "**Welcome**" screen should display, click "**Next**".
- g) The "**Software License Agreement**" screen should display, click "**Yes**".
- h) The "**User Information**" screen should display, type in your "**Name**", "**Company**" name and click "**Next**".
- i) The "**Choose destination Location**" screen should display, select "**c:\usr\alfast**" as the default setup directory and click "**Next**".
- j) The "**Start Copying Files**" screen should display, click "**Next**".
- k) After a few minutes the "**Setup Complete**" screen should display, select "**Finish**" to complete the installation.

3. Setting up the FASTLIB Environment Variable for WinNT

Follow these instructions only if you are using the Windows NT operating system. Otherwise skip this section and go to the next section.

- a) Right click "**My Computer**", select **Properties**, the "**System Properties**" screen should display.
- b) Select "**Environment**" tab, scroll down "System Variables" window and select "**Path**"
- c) Go to "Value" Window, type "**%alfast%\winnt\bin;**" at the beginning of the line and select "**Set**".
- d) Go to "Variable" Window, type "**alfast**" and then go to "Value" Window, type "**c:\usr\alfast**".
- e) Click "**Set**", "**apply**" and "**OK**" to close the "System Properties" windows.
- f) Reboot the PC System to complete the software installation and the environment setup.

4. Setting up the FASTLIB Environment Variable for Win2000

Follow these instructions only if you are using the Windows 2000 operating system. Otherwise skip this section and go to the next section.

- a) Right click "**My Computer**", select "**Properties**", the "System properties" screen should display.

- b) Select “**Advanced tab**”, click “**Environment Variables**”.
- c) Select “**System Variable**”, click “**New**”, the “**New system Variable**” screen should display.
- d) On the “**Variable name**” type “**ALFAST**”
- e) On The “**Variable Value**” type “**c:\usr\alfast**”.
- f) Select “**OK**”
- g) Scroll down “**system Variables**” window and select “**Path**”.
- h) Select “**Edit**”, the “**Edit System Variable**” screen should display.
- i) On “**Variable Value**” window, type “**%alfast%\winnt\bin;**” at the beginning of the line.
- j) Click “**OK**” 3 times to exit.
- k) Reboot the PC System to complete the software installation and the environment setup.

J. The ALFAST Installation

Follow these instructions only if you are installing the ALFAST software that is required for the FastSeries board. Otherwise skip this section and go to the next section.

1. General Information

Alacron ALFAST runtime support software has the following components, all of which will be installed at the same time by the installation program:

- Capture Library
- S3 Analog Output Library
- S3 Streaming Mode Library
- S3 TV Output Library
- Digital Output Library

When you install ALFAST software the first time, the installation program creates all required directories and files. When you install a newer ALFAST release over the older ALFAST software, previously installed files will be overwritten. Therefore, if you have modified any of the original distribution files, you should make copies of those files before installing the ALFAST upgrade.

The installation requires approximately one MB of free space on the target drive

2. Special note on prior ALFAST releases

If you have installed prior ALFAST software releases, you may have to uninstall the earlier software manually before installing a later version. To remove earlier ALFAST software:

Log on as: **Administrator**

Type **net stop s3bridgecontrol**

del %SystemRoot%\System32\s3bridgecontrol.exe

del %SystemRoot%\System32\drivers\pciprobe.sys

3. S3 Bridge Control Device

With the installation of the ALFAST runtime software, a native device driver “**pciprobe.sys**” and a service “**S3Bridgecontrol**” are installed and run at system-boot time.

They identify any Alacron S3 devices and reprogram the installed FastSeries-board PCI to create a PCI bridge device.

To support the TriMedia-controlled mode of the Analog Output library, it is necessary to isolate the PCI bus that is local to the FastSeries board from the PC primary-PCI bus. This is required in order to allow the TM processors to execute PCI I/O cycles to the S3 device without having the cycles reflected on the primary PCI bus, which would access other VGA devices in the system.

When the S3BridgeControl service is run, a log file with the file name **S3BridgeControl.log** is created in the environmentally variable directory TMPDIR.

4. Side Effect

A side effect of reprogramming the bridge is that PCI I/O cycles are not passed from the primary PCI bus to the FastSeries PCI bus. This is not a problem unless a PMC with a device that requires I/O access is installed.

Memory accesses to the FastSeries PCI bus are normal.

Registry keys contain an “Enable” variable. If one or more FastSeries bridges should not be reprogrammed, setting “Enable” to 0 will keep a specific S3 device from being reprogrammed. The registry keys are:

HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\S3BridgeControl\Device0
HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\S3BridgeControl\Device1
HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\S3BridgeControl\Device2
HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\S3BridgeControl\Device3

Use the system-supplied registry editor program (**regedit**) to alter the “Enable” variables or to control additional S3 devices beyond Device3.

5. Installing the ALFAST

- a) Insert the Alacron CD-ROM that came with your FastSeries board shipment into your CD-ROM drive.
- b) Access your CD-ROM drive, go to “**80004-90018**” directory and double click “**alfast-obj-x.y.z.exe**” to run the ALFAST installation.
- c) The “**Install Shield Self-extracting EXE**” screen should display, click “**Yes**” to install ALFAST Runtime.
- d) The “**InstallShield Wizard**” and then the “**ALFAST Runtime –InstallShield Wizard**” screen should display, click “**Next**”.
- e) The “Alacron Single-User License Agreements” screen should display, click “**Yes**”.
- f) Type in your “**Name**”, “**Company**” name and click “**Next**”.
- g) Select “**c:\usr\alfast**” as the default setup directory, click “**Next**” then click “**Next**” to begin copying files.
- h) After a few minutes the “**ALFAST Runtime –InstallShield Wizard**” screen should display, click “**Finish**” to complete the installation.

6. Setting up the ALFAST Environment Variable for WinNT

Follow these instructions only if you are using the Windows NT operating system. Otherwise skip this section and go to the next section.

- a) Right click **"My Computer"**, select **Properties**, the **"System Properties"** screen should display.
- b) Select **"Environment"** tab, scroll down "System Variables" window and select **"Path"**
- c) Go to "Value" Window, type **"%alfast%\winnt\bin;"** at the beginning of the line and select **"Set"**.
- d) Go to "Variable" Window, type **"alfast"** and then go to "Value" Window, type **"c:\usr\alfast"**.
- e) Click **"Set"**, **"apply"** and **"OK"** to close the "System Properties" window.
- f) Reboot the PC System to complete the software installation and the environment setup.

7. Setting up the ALFAST Environment Variable for Win2000

Follow these instructions only if you are used the Windows 2000 operating system. Otherwise skip this section and go to the next section.

- a) Right click **"My Computer"**, select **"Properties"**, the "System properties" screen should display.
- b) Select **"Advanced tab"**, click **"Environment Variables"**.
- c) Select **"System Variable"**, click **"New"**, the **"New system Variable"** screen should display.
- d) On the **"Variable name"** type **"ALFAST"**
- e) On The **"Variable Value"** type **"c:\usr\alfast"**.
- f) Select **"OK"**
- g) Scroll down **"system Variables"** window and select **"Path"**.
- h) Select **"Edit"**, the **"Edit System Variable"** screen should display.
- i) On **"Variable Value"** window, type **"%alfast%\winnt\bin;"** at the beginning of the line.
- j) Click **"OK"** 3 times to exit.
- k) Reboot the PC System to complete the software installation and the environment setup.

K. The ALRT Installation

Follow these instructions only if you are installing the ALRT software that is required for the FastSeries board. Otherwise skip this section and go to the next section.

1. General Information

Alacron Runtime (ALRT) software is a runtime environment for use with Alacron FastSeries boards equipped with TriMedia processors. ALRT provides features and utilities not available from TMMAN, and it was designed specifically for you to use under operating systems, like Windows NT, where TMMAN is not supported

ALRT is available for Linux, Solaris, and Windows operating systems, including Windows NT and Windows 2000. The software consists of four components: The host runtime software, the TriMedia runtime software, the device driver, and a set of utilities.

ALRT runs independently of Philips TMMAN; it can be transferred to new host operating systems with little effort, and ALRT is able to run all the TriMedia programs developed under the Philips SDE. The ALRT software consists of a host library and a TriMedia library.

When you install ALRT software the first time, the installation program creates all required directories and files. When you install a newer ALRT release over the older ALRT software, previously installed files will be overwritten. Therefore, if you have modified any of the original distribution files, you should make copies of those files before installing the ALRT upgrade

The installation requires approximately one MB of free space on the target drive

2. Installing the ALRT

- a) Insert the Alacron CD-ROM that came with your FastSeries board shipment into your CD-ROM drive.
- b) Access your CD-ROM drive, go to “\80023-90002” directory, select latest revision of ALRT and double click “**alrt-obj-x.y.z.exe**” to run the ALRT installation.
- c) The “**InstallShield Self-extracting EXE**” screen should display, select “**Yes**” to install ALRT WINNT OBJECT REV x.y.z.
- d) The “**Setup**” and then the “**Welcome**” screen should display, click “**Next**”.
- e) The “**Software License Agreements**” screen should display, click “**Yes**”.
- f) The “**User Information**” screen should display, type in your “**Name**”, “**Company**” name and click “**Next**”.
- g) The “**Choose destination Location**” screen should display, select “**c:\usr\alfast**” as the default setup directory and click “**Next**”.
- h) The “**Start Copying Files**” screen should display, click “**Next**”.
- i) After a few minutes the “**Setup Complete**” screen should display, select “**Finish**” to complete the installation.

3. Setting up the ALRT Environment Variable for WinNT

Follow these instructions only if you are using the Windows NT operating system. Otherwise skip this section and go to the next section.

- a) Right click “**My Computer**”, select **Properties**, the “**System Properties**” screen should display.
- b) Select “**Environment**” tab, scroll down “System Variables” window and select “**Path**”
- c) Go to “Value” window, type “**%alfast%\winnt\bin;**” at the beginning of the line and select “**Set**”.
- d) Go to “Variable” window, type “**alfast**” and then go to “Value” window, type “**c:\usr\alfast**”.
- e) Click “**Set**”, “**apply**” and “**OK**” to close the “System Properties” windows.

- f) Reboot the PC System to complete the software installation and the environment setup.

4. Setting up the ALRT Environment Variable for Win2000

Follow these instructions only if you are using the Windows 2000 operating system. Otherwise skip this section and go to the next section.

- a) Right click **"My Computer"**, select **"Properties"**, the "System properties" screen should display.
- b) Select **"Advanced tab"**, click **"Environment Variables"**.
- c) Select **"System Variable"**, click **"New"**, the **"New system Variable"** screen should display.
- d) On the **"Variable name"** type **"ALFAST"**
- e) On The **"Variable Value"** type **"c:\usr\alfast"**.
- f) Select **"OK"**
- g) Scroll down **"system Variables"** window and select **"Path"**.
- h) Select **"Edit"**, the **"Edit System Variable"** screen should display.
- i) On **"Variable Value"** window, type **"%alfast%\winnt\bin;"** at the beginning of the line.
- j) Click **"OK"** 3 times to exit.
- k) Reboot the PC System to complete the software installation and the environment setup.

L. The FastMem Installation

Follow these instructions only if you are installing the Fastmem software that is required for the FastSeries board. Otherwise skip this section and go to the next section

1. General Information

When you install ALFAST software the first time, the installation program creates all required directories and files. When you install a newer ALFAST release over the older ALFAST software, previously installed files will be overwritten. Therefore, if you have modified any of the original distribution files, you should make copies of those files before installing the ALFAST upgrade

The installation requires approximately one MB of free space on the target drive

2. Special Note on early FastMem releases

Early releases of FastMem software do not correctly overwrite files. If you have installed an earlier release of FastMem software, you may need to remove the previously installed version manually before installing your new FastMem software. To remove the old software:

Log on as: **Administrator**

Type: **net stop fmconfigsvc**

del %SystemRoot%\System32\fmconfigsvc.exe

Proceed with the installation of the new FastMem software and system reboot.

3. Installing the FastMem

- a) Insert the Alacron CD-ROM that came with your FastSeries board shipment into your CD-ROM drive.
- b) Access your CD-ROM drive, go to “\80021-90001” directory and double click “fastmem-obj-x.y.z.exe” to run the FastMem installation.
- c) The “InstallShield Wizard” and then the “FastMem WinNT Object - InstallShield Wizard” screen should display, click “Next”.
- d) The “Alacron Single-User License Agreements” screen should display, click “Yes”.
- e) Select “c:\usr\alfast” as the default setup directory, click “Next” then click “Next” again to begin copying files.
- f) After a few minutes the “FastMem WinNT Object - InstallShield Wizard” screen should display, select “Finish” to complete the installation.

4. Setting up the FastMem Environment Variable for WinNT

Follow these instructions only if you are using the Windows NT operating system. Otherwise skip this section and go to the next section.

- a) Right click “My Computer”, select **Properties**, the “System Properties” screen should display.
- b) Select “Environment” tab, scroll down “System Variables” window and select “Path”
- c) Go to “Value” window, type “%alfast%\winnt\bin;” at the beginning of the line and click “Set”.
- d) Go to “Variable” window, type “alfast” and then go to “Value” window, type “c:\usr\alfast”.
- e) Click “Set”, “apply” and “OK” to close the “System Properties” window.
- f) Reboot the PC System to complete the software installation and the environment setup.

5. Setting up the FastMem Environment Variable for Win2000

Follow these instructions only if you are using the Windows 2000 operating system. Otherwise skip this section and go to the next section.

- a) Right click “My Computer”, select “Properties”, the “System properties” screen should display.
- b) Select “Advanced tab”, click “Environment Variables”.
- c) Select “System Variable”, click “New”, the “New system Variable” screen should display.
- d) On the “Variable name” type “ALFAST”
- e) On The “Variable Value” type “c:\usr\alfast”.
- f) Select “OK”
- g) Scroll down “system Variables” window and select “Path”.
- h) Select “Edit”, the “Edit System Variable” screen should display.

- i) On "**Variable Value**" window, type "**%alfast%\winnt\bin;**" at the beginning of the line.
- j) Click "**OK**" 3 times to exit.
- k) Reboot the PC System to complete the software installation and the environment setup.

M. The Windows NT and Windows 2000 Configurations

Follow these instructions for all configurations and environment setups that are required for the FastSeries boards.

1. Define ALFAST Environment Variable for all Alacron RT Software

The ALFAST environment variable must be set to point to the ALRT and ALFAST runtime software directory.

- a) Refer to Section K step 3 for detailed instructions for WinNT.
- b) Refer to Section K step 4 for detailed instructions for Win2000.

2. Define TCS (TriMedia Compilation System) Environment Variable

The TCS environment variable must be set to point to the Philips SDE software directory.

- a) Refer to Section E step 3 for detailed instructions for WinNT.
- b) Refer to Section E step 4 for detailed instructions for W2000.

3. Define TMPDIR Environment Variable for WINNT

The TMPDIR environment variable must be set to point to a scratch directory for the Philips SDE toolset.

- a) Right click "**My Computer**", select "**Properties**, the "**System Properties**" screen should display.
- b) Select "**Environment**" tab, scroll down to "System Variables" window and select "**Path**"
- c) Select "**User Variables For Administration**".
- d) Go to "Variable" window, type "**TEMPDIR**" and then go to "Value" window, type "**c:\temp**".
- e) Click "**Set**", "**apply**" and "**OK**" to close the "System Properties" window.
- f) Reboot the PC System to complete the software installation and the environment setup.

4. Define boot.ini Environment for all Alacron RT Software

The "**boot.ini**" environment must be set for the ALRT software installation only.

- a) From a DOS command prompt run "**alrtregedit**".
- b) From the "**DMAbuf allocation**" click "**Use /MAXMEM**", change "Size" to "**16**", set "**System Pages**" to "**75000**", be sure "**Startup Type**" is set to "**Manual**".
- c) Click "**Save and Exit**".

- d) Determine how much physical memory your system has by right clicking on the **"My Computer"** icon and noting (near the bottom) something like **"134,218 KB"** for a **128MB** system, **"261,556 KB"** for a **256MB** system etc.
- e) Edit your system's **"boot.ini"** file as follows: Locate the boot drive (usually 'C:\'). From the file browser, change its properties to remove the 'read only' attribute.
- f) Using your favorite text editor, open and edit the file as follows:
- g) Calculate the OS memory size by subtracting 16 from your total memory size – i.e. with 128MB the remainder would be 112, or 240 for a 256MB system etc.
- h) Locate the line **"[operating systems]"**
- i) Copy the line just below it that looks something like:


```
"multi (0) disk (0) rdisk (0) partition (2) \WINNT="Windows NT 4.00"
```
- j) Paste the copy just below "operating systems" and modify to look like this (using the remainder you calculated):


```
"multi (0) disk (0) rdisk (0) partition (2) \WINNT="Windows NT /MAXMEM=112" /MAXMEM=112"
```
- k) Save the file and exit.
- l) Reboot your PC system, select the **"/MAXMEM version"** if it is not the default.

When all variables have been defined, must reboot Windows NT or Windows 2000 to complete the change setup and take effect.

N. Installation Check

1. The User Test for ALFAST

The ALFAST User Test is a standalone host program, which is part of the ALFAST Runtime Software release for FastSeries boards. After installation of all hardware and software, including the Philips SDE software, the User Test program should be run to check the installation.

The User Test:

- Performs configuration tests.
- Performs EEPROM tests.
- Indirectly verifies operation of the Philips TMMAN runtime environment
- Searches for inconsistencies in the installation, including TMMAN, EEPROM and PCI BIOS configuration.

The User Test generates:

- Data on each TriMedia processor found.
- Results of the consistency tests.
- Error messages, if any

Follow these instructions to run the usertest for the ALFAST:

- a) From a DOS command prompt type “**net start alfast**”. The screen should display:
The alfast service was started successfully
- b) From a DOS command prompt type “**usertest**” and “**Enter**”. The screen should display:

ALACRON FastSeries – User test
PCIPROBE

Version 1.5.xx
Version 1.5.xx

Model	TmPID	PID	SDRAM	MMIO	Serial #	Ver	Proc	Step	Freq
F113	0	0	xx000000<16MB>	xx800000	438000xxx	1.0	TM1300	6	178.6
F113	1	1	xx000000<16MB>	xx800000	438000xxx	1.0	TM1300	6	178.6
F113	2	2	xx000000<16MB>	xx800000	438000xxx	1.0	TM1300	6	178.6
F113	3	3	xx000000<16MB>	xx800000	438000xxx	1.0	TM1300	6	178.6
F413	4	4	xx000000<16MB>	xx800000	441000xxx	1.0	TM1300	6	178.6
F413	5	5	xx000000<16MB>	xx800000	441000xxx	1.0	TM1300	6	178.6
F413	6	6	xx000000<16MB>	xx800000	441000xxx	1.0	TM1300	6	178.6
F413	7	7	xx000000<16MB>	xx800000	441000xxx	1.0	TM1300	6	178.6

No Error detected.

2. The Tm Test for ALRT

The ALRT Tm Test is a standalone host program, which is part of the ALRT Runtime Software release for FastSeries boards. After installation of all hardware and software, including the Philips SDE software, the Tm Test program should be run to check the installation.

The User Test:

- Performs configuration tests.
- Performs EEPROM tests.
- Indirectly verifies operation of the Philips TMMAN runtime environment
- Searches for inconsistencies in the installation, including TMMAN, EEPROM and PCI BIOS configuration.

The User Test generates:

- Data on each TriMedia processor found.
- Results of the consistency tests.
- Error messages, if any

Follow these instructions to run the tmtest for the ALRT:

- a) From a DOS command prompt type “**net start alfast**”. The screen should display:
The alfast service was started successfully
- b) From a DOS command prompt type “**tmtest**” and “**Enter**”. The screen should display.

ALACRON FastSeries – User test
PCIPROBE

Version 1.5.xx
Version 1.5.xx

ALRT						Version 1.5.xx			
Model	TmPID	PID	SDRAM	MMIO	Serial #	Ver	Proc	Step	Freq
F113	0	0	xx000000<16MB>	xx800000	438000xxx	1.0	TM1300	6	178.6
F113	1	1	xx000000<16MB>	xx800000	438000xxx	1.0	TM1300	6	178.6
F113	2	2	xx000000<16MB>	xx800000	438000xxx	1.0	TM1300	6	178.6
F113	3	3	xx000000<16MB>	xx800000	438000xxx	1.0	TM1300	6	178.6
F413	4	4	xx000000<16MB>	xx800000	441000xxx	1.0	TM1300	6	178.6
F413	5	5	xx000000<16MB>	xx800000	441000xxx	1.0	TM1300	6	178.6
F413	6	6	xx000000<16MB>	xx800000	441000xxx	1.0	TM1300	6	178.6
F413	7	7	xx000000<16MB>	xx800000	441000xxx	1.0	TM1300	6	178.6

No Error detected.

3. The VDA Test

This program performs some simple VDA operations. First directly to the screen, then repeated to an SDRAM buffer and copied using vda_sync.

- a) Copy "nmake.exe" file from Microsoft Visio Studio software to "c:\usr\alfast\examples\target\ex6" subs directory.
- b) Copy "vda.ini" file located from "c:\usr\alfast\lib" sub directory to c:\usr\alfast\examples\target\ex6" subs directory.

Note: When performing the VDA testing the vda.ini must be set for the correct setting of the Analog output (S3 chip) or without Analog output (No S3 Chip) configuration. (See Appendix A for vda.ini file)

- c) From the DOS command prompt, type "nmake -f nmake.tmle" and "Enter". to compile the vdatest.out file that is required for the VDA Test.
- d) Type "run" to run the VDA test.

O. ALRT LINUX Installation

Details for software installation for Linux and instructions on building programs are in Alacron Manual Part Number 30002-00170 → ALRT, ALFAST & FASTLIB Software Installation Manual for Linux

P. NRE (Non Reoccurrence Engineering) Installation

Details for NRE software installation are in the Installation Notes that came with your CD ROM FastSeries board shipment.

V. APPENDIX

A. The VDA.INI File

1. The example of the vda.ini file.

```
#-----  
#  
#       vda.ini - VDA library configuration file  
#  
#       This file contains information about VDA devices.  Each  
#       device is described by a section [VDAn].  
#  
#-----  
!if 0      -> Set to 1 if the FastSeries has analog output (VGA)  
[VDA0]    Set to 0 if the FastSeries has no analog output (VGA)  
  
type = string s3  
locate = string localbus  
  
#--- Monitor section: change as needed  
  
h_retrace = float 4.0e-6           # minimum H retrace  
v_retrace = float 500e-6          # minimum V retrace  
h_sync_polarity = int 1           # 1 = +  
v_sync_polarity = int 1           # 1 = +  
h_sync_width = float 1.2e-6       # H sync width  
v_sync_width = float 52.0e-6      # V sync width  
  
!endif  
  
!if 1      -> Set to 0 if the FastSeries has analog output (VGA)  
[VDA0]    Set to 1 if the FastSeries has no analog output (VGA)  
  
#       setup for 15 bit 32k color mode  
  
locate = string fixed  
buffer_address = int 0xe2000000    ->Set to match Video Base Address Register  
                                     (Refer to Appendix; section A for identified these number)  
xres = int 800                    ->Set to match screen resolution  
yres = int 600                    ->Set to match screen resolution  
hstride = int 3                   ->Set to match bytes per display pixel 3 or 4  
vstride = int 1600                ->Set to equal (xres x hstride) for most adapters  
pixel_size = int 24               ->Set to match bits per display pixel 24 or 32  
!endif
```

Figure 8. VDA.INI File

2. Define the WinNT Buffer_Address for the vda.ini file

Follow these instructions only if you are using the Windows NT operating system. Otherwise skip this section and go to the next section.

- a) Click “Start”, “Programs”, “Administration Tools (Common)” and “Windows NT Diagnostics”, the “Windows NT diagnostics” screen should display.
- b) Select “Resources tab” and click “Memory”. On the “Address, Device, Bus, Type”, selects the bigger number of “Memory Range” and use that number for the video buffer address (ex: DE000000).

- c) Click “OK” to exit.

3. Define the Win2000 Buffer_Address for the vda.ini file

Follow these instructions only if you are using the Windows 2000 operating system. Otherwise skip this section and go to the next section.

- a) Right click “**My Computer**”, select “**Properties**”, the “System properties” screen should display.
- b) Select “**Hardware tab**”, click “**Device Manager**”, the “Device Manger” screen should display.
- c) Click “**Display Adapters**”, the “Manufacturing Name of the Video Display” screen should display.
- d) Right click on the “Manufacturing Name of the Video Display”, select “**Properties**”, the “Manufacturing Name of the Video Display Properties” screen should display.
- e) Select “**Resources tab**”. “On the Resource Type and Setting”, select the bigger number of “Memory Range and Setting” and use that number for the video buffer address (ex: DE000000).
- f) Click “OK” to close “Manufacturing Name of the Video Display Properties” window.
- g) Click “X” to close “Device Manger” window and click “OK” to exit.

B. The alrt.ini file

1. The Example of the alrt.ini file

```
[system]
maxdev = int 16
#use_IntB = int 1
#ClockSpeed = int 178571424
#ClockSpeed = int 166639600
#ClockSpeed = int 142857136
#ClockSpeed = int 119967528
#ClockSpeed = int 133333320
[Device.0]
ClockSpeed = int 178571424
[Device.1]
ClockSpeed = int 178571424
[Device.2]
ClockSpeed = int 178571424
[Device.3]
ClockSpeed = int 178571424
[Device.4]
ClockSpeed = int 178571424
[Device.5]
ClockSpeed = int 178571424
[Device.6]
ClockSpeed = int 178571424
[Device.7]
ClockSpeed = int 178571424
[Device.8]
ClockSpeed = int 178571424
[Device.9]
ClockSpeed = int 178571424
[Device.10]
```

```
ClockSpeed = int 178571424  
[Device.11]  
ClockSpeed = int 178571424  
[Device.12]  
ClockSpeed = int 178571424  
[Device.13]  
ClockSpeed = int 178571424  
[Device.14]  
ClockSpeed = int 178571424  
[Device.15]  
ClockSpeed = int 178571424
```

Figure 8. *alrt.ini File*

VI. TROUBLESHOOTING

There are several things you can try before you call Alacron Technical Support for help.

- _____ Make sure the computer is plugged in. Make sure the power source is on.
- _____ Go back over the hardware installation to make sure you didn't miss a page or a section.
- _____ Go back over the software installation to make sure you have installed all necessary software.
- _____ Run the Installation User Test to verify correct installation of both hardware and software.
- _____ Run the user-diagnostics test for your main board to make sure it's working properly.
- _____ Insert the Alacron CD-ROM and check the various Release Notes to see if there is any information relevant to the problem you are experiencing.

The release notes are available in the directory: `\usr\alacron\alinfo`

- _____ Compile and run the example programs found in the directory:
`\usr\alacron\src\examples`
- _____ Find the appropriate section of the Programmer's Guide & Reference or the Library User's Manual for the particular library and problem you are experiencing. Go back over the steps in the guide.
- _____ Check the programming examples supplied with the runtime software to see if you are using the software according to the examples.
- _____ Review the return status from functions and any input arguments.
- _____ Simplify the program as much as possible until you can isolate the problem. Turning off any operations not directly related may help isolate the problem.
- _____ Finally, first **save your original work**. Then remove any extraneous code that doesn't directly contribute to the problem or failure.

VII. ALACRON TECHNICAL SUPPORT

Alacron offers technical support to any licensed user during the normal business hours of 9 a.m. to 5 p.m. EST. We offer assistance on all aspects of processor board and PMC installation and operation.

A. Contacting Technical Support

To speak with a Technical Support Representative on the telephone, call the number below and ask for Technical Support:

Telephone: **603-891-2750**

If you would rather FAX a written description of the problem, make sure you address the FAX to Technical Support and send it to:

Fax: **603-891-2745**

You can email a description of the problem to support@alacron.com

Before you can contact technical support have the following information ready:

- _____ Serial numbers and hardware revision numbers of all of your boards. This information is written on the invoice that was shipped with your products.
- _____ Also, each board has its serial number and revision number written on either in ink or in bar-code form.
- _____ The version of the ALRT, ALFAST, or FASTLIB software that you are using.
- _____ You can find this information in a file in the directory: **\usr\alfast\alinfo**
- _____ The type and version of the host operating system, i.e., Windows 98.
- _____ Note the types and numbers of all your software revisions, daughter card libraries, the application library and the compiler
- _____ The piece of code that exhibits the problem, if applicable. If you email Alacron the piece of code, our Technical-Support team can try to reproduce the error. It is necessary, though, for all the information listed above to be included, so Technical Support can duplicate your hardware and system environment.

B. Returning Products For Repair Or Replacement

Our first concern is that you be pleased with your Alacron products.

If, after trying everything you can do yourself, and after contacting Alacron Technical Support, you feel your hardware or software is not functioning properly, you can return the product to Alacron for service or replacement. Service or replacement may be covered by your warranty, depending upon your warranty.

The first step is to call Alacron and request a "Return Materials Authorization" (RMA) number.

This is the number assigned both to your returning product and to all records of your communications with Technical Support. When an Alacron technician receives your returned hardware or software he will match its RMA number to the on-file information you have given us, so he can solve the problem you've cited.

When calling for an RMA number, please have the following information ready:

- _____ Serial numbers and descriptions of product(s) being shipped back
- _____ A listing including revision numbers for all software, libraries, applications, daughter cards, etc.
- _____ A clear and detailed description of the problem and when it occurs
- _____ Exact code that will cause the failure
- _____ A description of any environmental condition that can cause the problem

All of this information will be logged into the RMA report so it's there for the technician when your product arrives at Alacron.

Put boards inside their anti-static protective bags. Then pack the product(s) securely in the original shipping materials, if possible, and ship to:

**Alacron Inc.
71 Spit Brook Road, Suite 200
Nashua, NH 03060
USA**

Clearly mark the outside of your package:

Attention **RMA #80XXX**

Remember to include your return address and the name and number of the person who should be contacted if we have questions.

C. Reporting Bugs

We at Alacron are continually improving our products to ensure the success of your projects. In addition to ongoing improvements, every Alacron product is put through extensive and varied testing. Even so, occasionally situations can come up in the fields that were not encountered during our testing at Alacron.

If you encounter a software or hardware problem or anomaly, please contact us immediately for assistance. If a fix is not available right away, often we can devise a work-around that allows you to move forward with your project while we continue to work on the problem you've encountered.

It is important that we are able to reproduce your error in an isolated test case. You can help if you create a stand-alone code module that is isolated from your application and yet clearly demonstrates the anomaly or flaw.

Describe the error that occurs with the particular code module and email the file to us at:

support@alacron.com

We will compile and run the module to track down the anomaly you've found.

If you do not have Internet access, or if it is inconvenient for you to get to access, copy the code to a disk, describe the error, and mail the disk to Technical Support at the Alacron address below.

If the code is small enough, you can also:

FAX the code module to us at 603-891-2745

If you are faxing the code, write everything large and legibly and remember to include your description of the error.

When you are describing a software problem, include revision numbers of all associated software.

For documentation errors, photocopy the passages in question, mark on the page the number and title of the manual, and either FAX or mail the photocopy to Alacron.

Remember to include the name and telephone number of the person we should contact if we have questions.

**Alacron Inc.
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